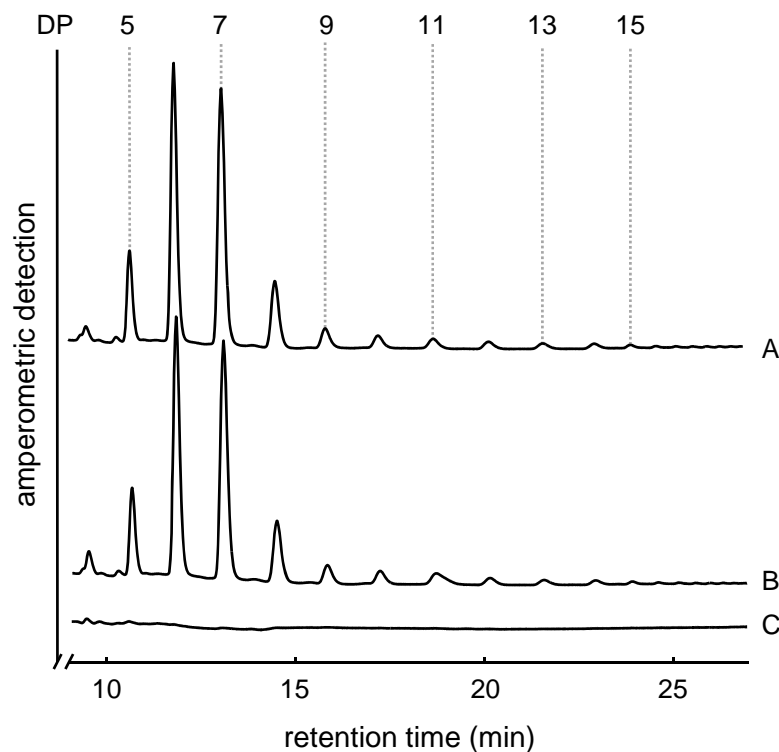
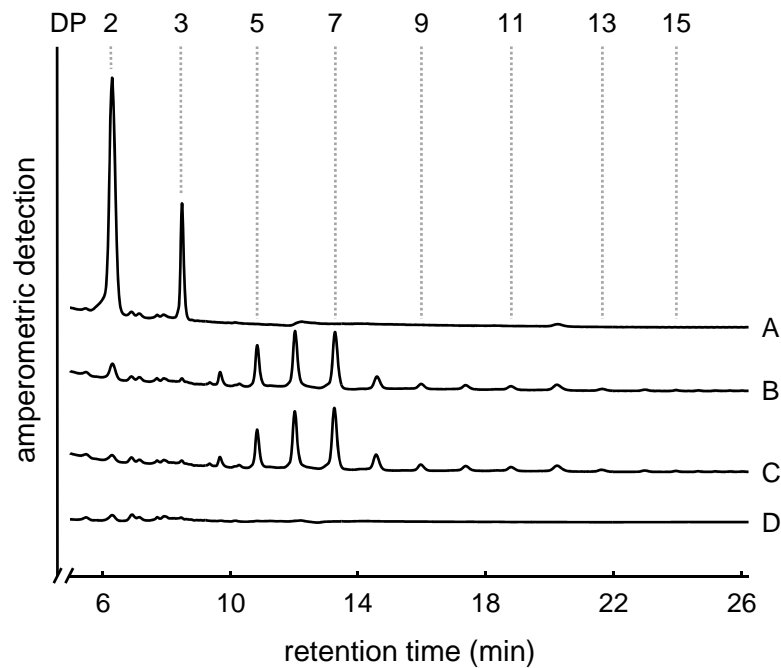


Supplemental Data. Kötting and Santelia et al. (2009).
 STARCH-EXCESS4 Is a Laforin-like Phosphoglucan Phosphatase
 Required for Starch Degradation in *Arabidopsis thaliana*.



Supplemental Figure 1. Recombinant SEX4 protein can act on phospho-oligosaccharides. Leaf extracts of *sex4* mutant plants (harvested at the end of the night; 30 mg fresh weight mL⁻¹) were analysed by HPAEC-PAD following treatment with recombinant SEX4 protein (**A**), Antarctic Phosphatase (**B**), or mock treatment (**C**) as described in Materials and Methods (51 ng enzyme μL⁻¹). One representative chromatogram each is depicted (n = 3 treatments). Figures above the panel indicate the degree of polymerisation (DP) of the detected glucan chains.



Supplemental Figure 2. Phospho-oligosaccharides in *sex4* are resistant to β -amylase treatment. Leaf extracts of *sex4* mutant plants (harvested at the end of the night; 33 mg fresh weight mL⁻¹) were incubated with (A-C) or without (D) Antarctic Phosphatase, prior to (A), followed by (B), or without (C, D)) treatment with barley β -amylase (Megazyme, Ireland; 20 U, 40°C, 1 h). Samples were analysed by HPAEC-PAD, and one representative chromatogram each is depicted (n = 4 treatments). Figures above the panel indicate the degree of polymerisation (DP) of the detected glucan chains.